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ORDER FOR SUPPLIES OR SERVICES SCHEDULE - CONTINUATION

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IMPORTANT: Mark all packages and papers with contract and/or order numbers.

DATE OF ORDER CONTRACT NO.

06/18/2019 68HERC19D0003

ORDER NO. 68HERC19F0191

ITEM NO.	SUPPLIES/SERVICES	QUANTITY ORDERED	UNIT	UNIT PRICE	AMOUNT	QUANTITY ACCEPTED
(a)	(b)	(c)	(d)	PRICE (e)	(f)	ACCEPTED (g)
	Admin Office:					
	CPOD					
	US Environmental Protection Agency					
	26 West Martin Luther King Drive					
	Mail Code: NWD					
	Cincinnati OH 45268					
	Accounting Info:					
	19-20-C-262S000-000F84-2532-26A5C-19262SC907					
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	2532 Cost: 26A5C DCN - Line ID:					
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PERFORMANCE WORK STATEMENT Task Order 68HERC19F0191

Title: NCEA Expert Recruitment to Support Health Assessment Activities

Specify Section & Paragraph SOW: A. Assessment Issues and Documents

Period of PERFORMANCE: CO award – [One Year from Award]

I. PURPOSE

The purpose of this task order is to provide services to the U.S. Environmental Protection Agency's (EPA) National Center for Environmental Assessment (NCEA), Office of Research and Development (ORD), in supporting the development of health assessments.

II. <u>BACKGROUND</u>

The Environmental Protection Agency's (EPA) National Center for Environmental Assessment (NCEA) provides scientific leadership for evaluating human health and ecological risks associated with exposure to physical, chemical, and biological stressors, including environmental pollutants. NCEA relies upon experts to support its mandated function of effectively analyzing, synthesizing, and communicating information in support of EPA's mission to protect human health and the environment.

III. STATEMENT OF WORK

A. Objective

The objective of this task order is to assist the NCEA in developing toxicological reviews, health assessments, and other related assessment materials. Contractor support will be requested to assist in the development of products that contribute to the development of chemical assessments and inform risk management decisions in support of EPA's program and regional offices.

B. Specific Requirements (Tasks)

Task 1: Establish Communication

Within 3 days of the start date of this TO, the Contractor shall schedule a conference call (not to exceed 1 hour) with the TOCOR and appropriate contractor staff to clarify outstanding questions and to review specific tasks. The TOCOR will submit work requests via a Technical Directive Form. This form will be used as instructions to the Contractor and will be submitted with each request. Copies of all correspondence pertaining to the performance of this task order shall be sent to the CL-COR.

Within 3 days, the Contractor shall schedule a conference call (not to exceed 1 hour) with the TOCOR and appropriate Contractor staff to clarify outstanding questions and to review additional tasks.

Delivery Schedule: Conference call scheduled within 3 days after receipt of task order.

Task 2: Manage, Identify and Recruit Experts to Support NCEA Health Assessment Activities

Specific direction will be provided by the EPA TOCOR through Technical Direction. It is expected that there will be approximately 15 separate requests for this task.

The Contractor shall identify, recruit and manage expert ("experts") to develop sections of toxicological reviews and/or related materials. The Contractor shall be responsible for ensuring timely communication is passed between the EPA TOCOR and the experts so that technical clarification can be offered and interaction between EPA and the experts can occur as needed. The Contractor shall also ensure that the deliverables are provided to the EPA TOCOR in a timely manner.

EPA seeks to identify and recruit experts to develop several document sections/types for several different chemical assessments. Examples include:

- 1) Evaluation of exposure methods in studies;
- 2) Literature screening and study evaluations;
- 3) Evidence tables of specific health effects;
- 4) Graphical displays of evidence of specific health effects;
- 5) Other support (technical consultations, quantitative analysis support, white papers, etc.).

EPA will provide guidance (e.g., IRIS Handbook, chemical-specific screening guidance) and the appropriate templates for all tasks. The chemical assessments and related documents that will require assistance under this PWS will be clarified through technical direction.

The EPA assumes primary authorship in the writing process for all materials and contributing experts are listed in the final documents as appropriate. EPA will approve each of the experts performing work within two days of notification of a potential candidate.

Delivery Schedule: Deliverable schedule will be defined in the technical direction.

Subtasks

Identify and Recruit Expert

The Contractor shall identify and contact experts with a knowledge base that is aligned with the descriptions in each written TD. Each TD will specify the minimum/desired qualifications of the experts for that chemical assessment. The expertise needed will be specific to the broad field of epidemiology, toxicology, statistics, and/or pharmacokinetic modeling. Approximately 10 experts will be needed. Potential experts shall be asked to submit a bio-sketch to ensure they meet the minimum/desired qualifications, and EPA will notify the contractor of its concurrence with the selection. All approved experts will be required to be familiar with general QA practices of the Contractor, of EPA and any applicable project specific QAPPs. The contractor must certify that all approved experts have been provided with the appropriate QA guidance, QAPPs, and training by either EPA staff, the Contractor, or both in order to fulfill this requirement.

The Contractor shall manage the recruited experts and ensure timely communication occurs between EPA and the experts. This shall involve setting up conference calls with the experts and EPA staff. In addition, the Contractor shall ensure that the written sections, comments and draft reviews are progressing on schedule and are delivered by the deadlines noted in this TO.

Deliverable Schedule: The schedule and specific expertise requested will be clarified within a TD.

IV. EPA CONTACT INFORMATION

Copies of all correspondence pertaining to the performance of this task order shall be sent to the CL-COR.

TOCOR
Dahnish Shams
202-564-2758
Shams.dahnish@epa.gov

Alt TOCOR
Genience Lehmann
919-541-2289
Lehmann.geniece@epa.gov

AMENDMENT OF SOLICITATION/MODIFICA	ATION OF CONTRACT	CONTRACT ID CODE	PAGE OF PAGES
2. AMENDMENT/MODIFICATION NO.	3. EFFECTIVE DATE	4. REQUISITION/PURCHASE REQ. NO.	5. PROJECT NO. (If applicable)
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Except as provided herein, all terms and conditions of the	e document referenced in Item 9 A or	10A, as heretofore changed, remains unchanged and	in full force and effect.
15A. NAME AND TITLE OF SIGNER (Type or print)		16A. NAME AND TITLE OF CONTRACTING OF	FFICER (Type or print)
		William M. Yates	
15B. CONTRACTOR/OFFEROR	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA	16C. DATE SIGNED
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	RTP Finance Center				
	US Environmental Protection Agency				
	RTP-Finance Center (AA216-01)				
	109 TW Alexander Drive				
	www2.epa.gov/financial/contracts				
	Durham NC 27711				
	Period of Performance: 07/26/2019 to 07/25/2020				
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ORDER FOR SUPPLIES OR SERVICES SCHEDULE - CONTINUATION

PAGE NO

	SCHEDULE - CONTINUATION	ĺ		2	
IMPORTANT: Mark	call packages and papers with contract and/or order numbers.			~	
DATE OF ORDER	CONTRACT NO.		ORI	DER NO.	
06/20/2019	68HERC19D0003		68	HERC19F0193	
ITEM NO	SUPPLIES/SERVICES	OHANTITY LINIT	LINIT	AMOUNT	OHANTITY

ITEM NO.	SUPPLIES/SERVICES	QUANTITY		UNIT	AMOUNT	QUANTITY
(a)	(b)	ORDERED (c)	(d)	PRICE (e)	(f)	ACCEPTED (g)
	Admin Office:					
	CPOD					
	US Environmental Protection Agency					
	26 West Martin Luther King Drive					
	Mail Code: NWD					
	Cincinnati OH 45268					
	Period of Performance: 05/01/2019 to					
	04/30/2024					
001	TO-0010 Improving the data available from				79,143.00	
	the LASSO climate change web application					
	Accounting Info:					
	18-19-C-262W000-000FK6XR1-2532-26A5C-1					
	9262WC908-001 BFY: 18 EFY: 19 Fund: C					
	Budget Org: 262W000 Program (PRC):					
	000FK6XR1 Budget (BOC): 2532 Cost:					
	26A5C DCN - Line ID: 19262WC908-001					
	Funding Flag: Complete					
	Funded: \$49,143.00					
	Accounting Info:					
	18-19-C-262W000-000FK8XPW-2532-26A5C-1					
	9262WC908-002 BFY: 18 EFY: 19 Fund: C					
	Budget Org: 262W000 Program (PRC):					
	000FK8XPW Budget (BOC): 2532 Cost:					
	26A5C DCN - Line ID: 19262WC908-002					
	Funding Flag: Complete					
	Funded: \$30,000.00					
	TOTAL CARRIED FORWARD TO 1ST PAGE (ITEM 17(H))				\$79,143.00	

PERFORMANCE WORK STATEMENT

Contract # 68HERC19D0003 TO 68HERC19F0193

Title: Improving the data available from the LASSO climate change web application

PERIOD of PERFORMANCE: Award to 12 months

I. PURPOSE

The purpose of this task order is to provide services to the U.S. Environmental Protection Agency's National Center for Environmental Assessment (NCEA), Exposure Analysis and Risk Characterization Group (EARCG) for revising and improving the Locating and Selecting Scenarios Online (LASSO) Web application.

II. OBJECTIVES

The objective of this Performance Work Statement (PWS) is to update and revise an EPA Web application called LASSO (<u>L</u>ocating <u>and Selecting Scenarios Online</u>), which is a tool that helps users understand, identify, and download climate change projections. The tool is unique in that it not only makes climate change data available in a variety of formats (scatterplots, maps, and spatial data), but provides guidance for approaches to identifying a subset of the numerous climate change projections available.

An initial version of the LASSO tool has been deployed to an EPA production environment and is publicly available. Work performed under this PWS will use that version of the LASSO web application as a starting point, and serve to enhance, improve, and expand the data, information, and workflow that make up the LASSO approach.

III. BACKGROUND

A significant portion of the EARCG research portfolio includes the development of tools and methods to assess the impacts of climate change on human health, air quality, water quality, and ecosystems. Within the United States, climate change is expected to contribute to a range of health impacts for vulnerable populations. The extent and nature of climate change impacts on human health vary by location, by the relative vulnerability of specific population groups, by the extent and duration of exposure to climate change (including, for example, heat and extreme weather events), and by society's ability to adapt to or cope with climate change.

As the study of climate change impacts and vulnerability continues to evolve, new and updated climate model outputs are being produced that incorporate the latest and best understanding of the climate system. Moreover, there are new and evolving methods for increasing the spatial resolution of these outputs ("downscaling"), further increasing the number of available climate change projections. While this new information plays a critical role in the assessment of potential climate change impacts, the volume and complexity of the information means that locating and identifying useful projections of climate change can be a confusing, laborious, and technically challenging task.

In most cases, potential climate change impacts are assessed by using a subset of available climate change projections, rather than the dozens of models and realizations that make up the complete ensemble. For

example, one obvious approach would be to identify and select those models that project the most and least amount of temperature change, with the understanding that expected impacts should fall somewhere in resulting range. Unfortunately, there are few tools available to inform this process in any way, leaving many interested parties with the question: "Which climate projection(s) should I use?"

An equally challenging barrier for many is the technical knowledge needed to parse, aggregate, or otherwise manipulate climate projection information. Many scientists and researchers possess a mature understanding of climate change issues, but lack the specific technical skills needed to navigate data formats common to climate data archives. This obstacle can be summed up by another question: "Where can I download the climate projection(s) I need?"

To address these two barriers, EARCG has a developed a Web application that provides a simple interface to a large portion of available climate change projections. The LASSO tool leverages existing Web technologies and design principles to help interested users not only navigate large, online climate datasets, but also parsimoniously identify and acquire the information they need. A key audience for LASSO consists of people with only a modest understanding of climate change scenario frameworks (e.g., the Representative Concentration Pathways¹). Therefore, a particularly novel aspect of LASSO is the integration of easy-to-understand guidance and explanations of best practices. Unlike similar tools², LASSO is designed to not only make spatial climate data available to its users, but to aid in the process of identifying a reasonable subset of those data in a way that is logical, transparent, and reflective of generally accepted approaches.

IV. REQUIRED CONTRACTOR QUALIFICATIONS.

The Contractor shall provide demonstrated professional expertise in these areas:

- 1. Climate change scenarios including the use, strengths, and limitations of scenario frameworks such as the Representative Concentration Pathways (RCPs)
- 2. Web development; specifically, interactive scientific Web applications

V. STATEMENT of WORK.

Task 1: Establish Communication, Cost Estimate, and Quality Assurance Project Plan

Within 3 days of award date of this TO, the Contractor shall schedule a conference call with the TOCOR and appropriate contractor staff to clarify outstanding questions and confirm the schedule and specific tasks. The Contractor shall prepare and submit a plan describing the project schedule, staffing, and hours required for completion of each task described in the Task Order, as well as an overall cost estimate for the work plan.

The contractor shall develop a quality assurance project plan (QAPP) for this task order for the Task Order Contracting Officer Representative (TOCOR) and QA manager approval. The work plan and the quality assurance project plan (QAPP) shall be submitted simultaneously for the TOCOR's approval. The contractor shall not perform any work under this task order until the quality assurance project plan is reviewed and approved by the TOCOR and QA Manager. The QAPP shall be prepared in accordance with EPA QA/R-5 (EPA/240/B-01/003 Requirements for Quality Assurance Project Plans May 2006), to ensure that environmental and related data collected, compiled, and/or generated for this project are complete, accurate, and of the type, quantity, and quality required for their intended use. This Task Order does not involve direct measurement of environmental conditions, collection of environmental samples, or laboratory analysis. However, the tasks in the Task Order require compilation and formatting of data and implementation of

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¹ http://sedac.ipcc-data.org/ddc/ar5 scenario process/RCPs.html

² For example: http://maca.northwestknowledge.net/vis scatterplot.php

environmental models and geospatial mapping applications. The QAPP should describe the approach and measures that will be implemented to ensure a high standard of quality in data analysis and written deliverables. EPA guidance for developing QAPPs for modeling is provided in EPA QA/G-5M (EPA, 2002) and for geospatial data in EPA QA/G-5G (EPA, 2003).

The contractor shall evaluate the task order and the materials provided by the EPA TOCOR and prepare the QA project plan and the work plan and cost estimates within 1 week after the receipt of the task order.

Deliverable 1.1. Initial Conference Call – to clarify outstanding questions and confirm the schedule and specific tasks within 3 days of task order award

Deliverable 1.2. The Contractor shall prepare and submit a plan and QAPP describing the project schedule, staffing, hours and QA activities required for completion of each task described in the Task Order, as well as an overall cost estimate for the work plan, within 1 week from the Contractor's receipt of the PWS.

Task 2: Routine and ongoing communication activities.

Within 1 week after task order award, the contractor shall meet with the EPA TOCOR for discussion regarding the scope and conduct of the plan and to address any questions or need for clarification or elaboration. The Contractor shall take brief minutes at this and subsequent meetings and teleconference calls and provide those minutes, including any action items, to the TOCOR as requested.

In collaboration with the TOCOR, the Contractor shall establish a schedule for regular progress reports, project meetings, and other communications throughout the period of performance of this TO. It is estimated that this TO will require regular meetings and/or conference calls with the TOCOR and appropriate Contractor staff. Throughout the course of the Work Plan, the Contractor shall inform the TOCOR of any developments that affect the conduct of the project or the schedule. All deliverables shall be sent electronically to the TOCOR.

Deliverable 2.1. Project Meeting. The Contractor shall schedule a kick-off meeting with the TOCOR to address the timeline for the PWS, the scope and conduct of the work plan and to address any questions or need for clarification or elaboration within one week following the TOCOR's approval of the Work Plan.

Deliverable 2.2. Routine Communications / Meetings. Project meetings and other communications, including updates via conference calls, are scheduled as required by the TOCOR or at the request of the Contractor for the duration of the task order. When needed, brief meeting minutes, including action items, shall be prepared by the Contractor and emailed to the TOCOR within **2 business days following all project meetings or conference calls**.

Task 3: Complete the addition of state-level climate data to LASSO

The Contractor shall update the LASSO application such that BCSD and LOCA climate data aggregated by state boundaries are available to the user. Changes to the application made under this task should preserve the general look, feel, and user experience of the current LASSO application. The underlying climate data will be provided by EPA in a format identical to the existing LASSO files.

Deliverable 3.1. The Contractor shall implement changes detailed in existing memo. Existing changes to the LASSO application completed in Task 5.1 of Contract # EP-C-14-001, WA 4-117 shall

be finalized, and the updated application shall be delivered to the EPA NCC staff with instructions for deployment on the staging environment. This deliverable is due May 30th, 2019.

Deliverable 3.2: The Contractor shall identify and implement updates and fixes needed for a final public release. The Contractor shall implement needed updates and fixes identified after the application has been deployed to the NCC staging environment. The updated application shall be delivered to the EPA NCC with instructions for deployment to the production environment. This deliverable is due June 13th, 2019.

Task 4: Add climate extremes to LASSO

The Contractor shall update the LASSO application to such that a minimum of two additional climate change metrics (e.g., maximum daily temperature, days with precipitation > 2 inches) are available to the user. Changes to the application made under this task should preserve the general look, feel, and user experience of the current LASSO application. The underlying climate data will be provided by EPA in a format identical to the existing LASSO files.

Deliverable 4.1: Memo describing proposed changes to the LASSO application to incorporate extreme climate metrics. This deliverable shall include a review of any comments, feedback, or user testing This deliverable is due June 30th, 2019.

Deliverable 4.2. The Contractor shall implement approved changes identified in Deliverable 5.1. The updated application shall be delivered to the EPA NCC staff with instructions for deployment on the staging environment. This deliverable is due July 30th, 2019.

Deliverable 4.3: The Contractor shall identify and implement updates and fixes needed for a final public release. The Contractor shall implement needed updates and fixes identified after the application has been deployed to the NCC staging environment. The updated application shall be delivered to the EPA NCC with instructions for deployment to the production environment. This deliverable is due August 30th, 2019.

VI. DELIVERABLE TIMELINE

Task	Description	Deliverable Timeline
TASK 1	Establish communication, work plan, cost estimate,	
	and quality assurance	
1.1	Initial conference call	Within 3 days from the receipt of the PWS
1.2	Preparation of the work plan and cost estimate and	Within 1 week of the receipt of the TO
	QAPP	
TASK 2	Routine and ongoing communication	
2.1	Project meeting: Project Kick-off Meeting with	Within 1 week of the TOCOR's approval of the Work
	Contractor and TOCOR	Plan
2.2	Other routine communications and meetings	As needed per the request of the Contractor or of the
		TOCOR
TASK 3	Add state-level climate data to LASSO	
3.1	Implement changes; deliver app NCC staging	May 30 th , 2019
3.2	Deliver final app to NCC production	June 13 th , 2019
TASK 4	Add climate extremes to LASSO	
4.1	Memo describing proposed changes	June 30 th , 2019
4.2	Implement changes; deliver app to NCC staging	July 30 th , 2019
4.3	Deliver final app to NCC production	August 30 th , 2019

VII. MANAGEMENT CONTROLS

- 1. All deliverables shall be reviewed for conformance to the requirements of this task order before being approved as final.
- 2. The contractor shall comply with other applicable requirements for final task order reports stipulated in contract.

VII. NOTICE REGARDING GUIDANCE PROVIDED UNDER THIS PROJECT

Guidance is strictly limited to technical and analytical support. The contractor shall not engage in activities of an inherent governmental nature such as the following:

- (1) Formulation of Agency policy
- (2) Selection of Agency priorities
- (3) Development of Agency regulations

Should the contractor receive any instruction from an EPA staff person that the contractor ascertains to fall into any of these categories or goes beyond the scope of the contract or task order, the contractor shall immediately contact the PO, TOCOR or CO.

IX. SPECIAL CONDITIONS AND ASSUMPTIONS

The contractor shall hold a conference call with the EPA TOCOR at the initiation of the task order and shall provide a bi-weekly update to the TOCOR by telephone for the duration of the task order, in addition to the standard reporting requirements of the contract.

X. EPA CONTACT INFORMATION

Copies of all correspondence pertaining to the performance of this task order shall be sent to the TOCOR.

Task Order Contracting Officer Representative (TOCOR):

Phil Morefield

Telephone: 202-564-7549 FAX: 202-564-0296

Email: morefield.philip@epa.gov

Postal Address: 1200 Pennsylvania Ave, NW; Mail code 8623R; Washington, DC 20460 Physical Address: USEPA; Ronald Reagan Building; 1300 Pennsylvania Ave, NW, Rm 71252,

Washington, D.C. 20004

Alternate Task Order Contracting Officer Representative (TOCOR):

Thomas Johnson

Telephone: 202-564-6677 FAX: 202-564-0296

Email: johnson.thomas@epa.gov

Postal Address: 1300 Pennsylvania Ave, NW; Mail code 8623R; Washington, DC 20460 Physical Address: USEPA; Ronald Reagan Building; 1300 Pennsylvania Ave, NW, Rm 71246,

Washington, D.C. 20004

AMENDMENT OF SOLICITATION/MODIFIC	ATION OF CONTRACT		1. CONTRACT ID CODE	PAGE	OF PAGES
2. AMENDMENT/MODIFICATION NO.	3. EFFECTIVE DATE	4. REC	UISITION/PURCHASE REQ. NO.	5. PROJECT	NO. (If applicable)
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ORD/OARS/EMD/SAB		26 Mai	O Environmental Protectio West Martin Luther King l Code: NWD Cinnati OH 45268		У
8. NAME AND ADDRESS OF CONTRACTOR (No., street	nt, county, State and ZIP Code)	(x) 9A	AMENDMENT OF SOLICITATION NO.		
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CODE 072648579	FACILITY CODE	- 10	6/20/2019		
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C. THIS SUPPLEMENTAL AGREEMEN D. OTHER (Specify type of modification		AUTHORI	TY OF:		
E. IMPORTANT: Contractor 🗵 is not	is required to sign this document a	and return	copies to the issuin	ig office.	
14. DESCRIPTION OF AMENDMENT/MODIFICATION DUNS Number: 072648579 TOCOR: PMOREFIELD Max Expire LIST OF CHANGES: Reason for Modification: The period of performance under the period of performa	e Date: 06/19/2021 ne purpose of this a		olicitation/contract subject matter where feasi		to extend
CHANGES FOR LINE ITEM NUMBER					
End Date changed from 19-JUN	N-20 to 19-JUN-21				
Except as provided herein, all terms and conditions of to 15A. NAME AND TITLE OF SIGNER (Type or print)	he document referenced in Item 9 A or	16A.	retofore changed, remains unchanged and in NAME AND TITLE OF CONTRACTING OFFI liam M. Yates		
15B. CONTRACTOR/OFFEROR	15C. DATE SIGNED		JNITED STATES OF AMERICA	, ceroowe	16C. DATE SIGNED
(Signature of person authorized to sign)		- 13		LECTRONIC SIGNATURE	06/16/2020

 CONTINUATION SHEET
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 OF

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NAME OF OFFEROR OR CONTRACTOR

M NO.	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
(P)	(B)	(C)	(D)	(E)	(F)
	December 1				
	Payment: RTP Finance Center				
	US Environmental Protection Agency				
	RTP-Finance Center (AA216-01)				
	109 TW Alexander Drive				
	www2.epa.gov/financial/contracts				
	Durham NC 27711				
	Period of Performance: 06/20/2019 to 06/19/2021				
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6. ISSUED BY CODE	ORD/OARS/EMD/SAB	7. ADMINISTERED BY (If other than Item 6)	CODE CPOD
ORD/OARS/EMD/SAB		CPOD US Environmental Protect 26 West Martin Luther Ki Mail Code: NWD Cincinnati OH 45268	2 2
8. NAME AND ADDRESS OF CONTRACTOR (No., street	, county, State and ZIP Code)	(x) 9A. AMENDMENT OF SOLICITATION NO.	
ICF Incorporated, L.L.C. Attn: Robert Toth 9300 LEE HIGHWAY FAIRFAX VA 220316050		9B. DATED (SEE ITEM 11) x 10A. MODIFICATION OF CONTRACT/ORDE 68HERC19D0003 68HERC19F0193 10B. DATED (SEE ITEM 13)	ER NO.
CODE 0726/8579	FACILITY CODE	06/20/2019	
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CHECK ONE A. THIS CHANGE ORDER IS ISSUED I ORDER NO. IN ITEM 10A. B. THE ABOVE NUMBERED CONTRAC appropriation data, etc.) SET FORTH	nce to the solicitation and this amendmentuired) ODIFICATION OF CONTRACTS/ORDE PURSUANT TO: (Specify authority) THE CT/ORDER IS MODIFIED TO REFLECTED IN ITEM 14, PURSUANT TO THE AUTOMACHICANIA STATEM 14.	ent, and is received prior to the opening hour and dates. IT MODIFIES THE CONTRACT/ORDER NO. AS THE CHANGES SET FORTH IN ITEM 14 ARE MADE THE ADMINISTRATIVE CHANGES (such as chan ITHORITY OF FAR 43.103(b).	S DESCRIBED IN ITEM 14. IN THE CONTRACT
C. THIS SUPPLEMENTAL AGREEMEN D. OTHER (Specify type of modification		AUTHORITY OF:	
E. IMPORTANT: Contractor X is not	is required to sign this document a	and return copies to the is	ssuing office.
14. DESCRIPTION OF AMENDMENT/MODIFICATION DUNS Number: 072648579 TOCOR: PMOREFIELD Max Expire The purpose of this modifica modification signed by Raoul unchanged. Continued	Date: 06/19/2021 tion is to incorpore Scott on July 30,	ate the attached EPA blank 2020. All other terms and	et administrative d conditions remain
Except as provided herein, all terms and conditions of the 15A. NAME AND TITLE OF SIGNER (Type or print)	e document referenced in Item 9 A or 1	10A, as heretofore changed, remains unchanged and 16A. NAME AND TITLE OF CONTRACTING C William M. Yates	
15B. CONTRACTOR/OFFEROR	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA	16C. DATE SIGNED ELECTRONIC SIGNATURE 1.0./0.7./2.0.2.0
(Signature of person authorized to sign)	_	(Signature of Contracting Officer)	10/07/2020

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 PAGE 2
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NAME OF OFFEROR OR CONTRACTOR

EM NO.	SUPPLIES/SERVICES	QUANTITY		UNIT PRICE	AMOUNT
(A)	(B)	(C)	(D)	(E)	(F)
	Payment:				
	RTP Finance Center				
	US Environmental Protection Agency				
	RTP-Finance Center (AA216-01)				
	109 TW Alexander Drive				
	www2.epa.gov/financial/contracts				
	Durham NC 27711				
	Period of Performance: 06/20/2019 to 06/19/2021				
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OMS/ARM US Enviror 1200 Penn	Scott, Director I/OAS/Policy, Training and Over nmental Protection Agency, Mai nsylvania Avenue, NW n, DC 20004	rsight Division I Code 3802R			_		
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or (c) By separa RECEIVED AT by virtue of this communication	ng items 8 and 15, and returning ate letter or electronic communication which i THE PLACE DESIGNATED FOR THE RECI amendment you desire to change an offer al makes reference to the solicitation and this a	ncludes a reference to the sol EIPT OF OFFERS PRIOR TO ready submitted, such change imendment, and is received p	icitation and amendment num THE HOUR AND DATE SPE e may be made by letter or ele rior to the opening hour and o	bers. FAILURE OF YO ECIFIED MAY RESULT I ectronic communication, late specified.	UR ACKNOWLE IN REJECTION (provided each le	DGMENT OF YOUR	TO BE OFFER. If
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	D. OTHER (Specify type of modification and	a authority)			·		
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Except as provi	ded herein, all terms and conditions of the do	cument referenced in Item 9A	or 10A, as heretofore chang	ed, remains unchanged	and in full force	and effect.	
15A. NAME AN	ND TITLE OF SIGNER (Type or print)		16A. NAME AND TITLE OF Raoul D. Scott, Dire			•	Division
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(S	ignature of person authorized to sign)	_	(Signature	of Contracting Officer)			

52.204-25 Prohibition on Contracting for Certain Telecommunications and Video Surveillance Services or Equipment.

As prescribed in 4.2105(b) and in the applicability instructions in interim FAR Case 2019-009, insert the following clause:

Prohibition on Contracting for Certain Telecommunications and Video Surveillance Services or Equipment (Aug 2020)

(a) <u>Definitions</u>. As used in this clause—

Backhaul means intermediate links between the core network, or backbone network, and the small subnetworks at the edge of the network (e.g., connecting cell phones/towers to the core telephone network). Backhaul can be wireless (e.g., microwave) or wired (e.g., fiber optic, coaxial cable, Ethernet).

Covered foreign country means The People's Republic of China.

Covered telecommunications equipment or services means—

- (1) Telecommunications equipment produced by Huawei Technologies Company or ZTE Corporation (or any subsidiary or affiliate of such entities);
- (2) For the purpose of public safety, security of Government facilities, physical security surveillance of critical infrastructure, and other national security purposes, video surveillance and telecommunications equipment produced by Hytera Communications Corporation, Hangzhou Hikvision Digital Technology Company, or Dahua Technology Company (or any subsidiary or affiliate of such entities);
- (3) Telecommunications or video surveillance services provided by such entities or using such equipment; or
- (4) Telecommunications or video surveillance equipment or services produced or provided by an entity that the Secretary of Defense, in consultation with the Director of National Intelligence or the Director of the Federal Bureau of Investigation, reasonably believes to be an entity owned or controlled by, or otherwise connected to, the government of a covered foreign country.

Critical technology means-

- (1) Defense articles or defense services included on the United States Munitions List set forth in the International Traffic in Arms Regulations under subchapter M of chapter I of title 22, Code of Federal Regulations;
- (2) Items included on the Commerce Control List set forth in Supplement No. 1 to part 774 of the Export Administration Regulations under subchapter C of chapter VII of title 15, Code of Federal Regulations, and controlled-

- (i) Pursuant to multilateral regimes, including for reasons relating to national security, chemical and biological weapons proliferation, nuclear nonproliferation, or missile technology; or
 - (ii) For reasons relating to regional stability or surreptitious listening;
- (3) Specially designed and prepared nuclear equipment, parts and components, materials, software, and technology covered by part 810 of title 10, Code of Federal Regulations (relating to assistance to foreign atomic energy activities);
- (4) Nuclear facilities, equipment, and material covered by part 110 of title 10, Code of Federal Regulations (relating to export and import of nuclear equipment and material);
- (5) Select agents and toxins covered by part 331 of title 7, Code of Federal Regulations, part 121 of title 9 of such Code, or part 73 of title 42 of such Code; or
- (6) Emerging and foundational technologies controlled pursuant to section 1758 of the Export Control Reform Act of 2018 (50 U.S.C. 4817).

Interconnection arrangements means arrangements governing the physical connection of two or more networks to allow the use of another's network to hand off traffic where it is ultimately delivered (e.g., connection of a customer of telephone provider A to a customer of telephone company B) or sharing data and other information resources.

Reasonable inquiry means an inquiry designed to uncover any information in the entity's possession about the identity of the producer or provider of covered telecommunications equipment or services used by the entity that excludes the need to include an internal or third-party audit.

Roaming means cellular communications services (e.g., voice, video, data) received from a visited network when unable to connect to the facilities of the home network either because signal coverage is too weak or because traffic is too high.

Substantial or essential component means any component necessary for the proper function or performance of a piece of equipment, system, or service.

(b) Prohibition. (1) Section 889(a)(1)(A) of the John S. McCain National Defense Authorization Act for Fiscal Year 2019 (Pub. L. 115-232) prohibits the head of an executive agency on or after August 13, 2019, from procuring or obtaining, or extending or renewing a contract to procure or obtain, any equipment, system, or service that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system. The Contractor is prohibited from providing to the Government any equipment, system, or service that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system, unless an exception at paragraph (c) of this clause applies or the covered telecommunication equipment or services are covered by a waiver described in FAR 4.2104.

- (2) Section 889(a)(1)(B) of the John S. McCain National Defense Authorization Act for Fiscal Year 2019 (Pub. L. 115-232) prohibits the head of an executive agency on or after August 13, 2020, from entering into a contract, or extending or renewing a contract, with an entity that uses any equipment, system, or service that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system, unless an exception at paragraph (c) of this clause applies or the covered telecommunication equipment or services are covered by a waiver described in FAR 4.2104. This prohibition applies to the use of covered telecommunications equipment or services, regardless of whether that use is in performance of work under a Federal contract.
 - (c) Exceptions. This clause does not prohibit contractors from providing—
- (1) A service that connects to the facilities of a third-party, such as backhaul, roaming, or interconnection arrangements; or
- (2) Telecommunications equipment that cannot route or redirect user data traffic or permit visibility into any user data or packets that such equipment transmits or otherwise handles.
 - (d) Reporting requirement.
- (1) In the event the Contractor identifies covered telecommunications equipment or services used as a substantial or essential component of any system, or as critical technology as part of any system, during contract performance, or the Contractor is notified of such by a subcontractor at any tier or by any other source, the Contractor shall report the information in paragraph (d)(2) of this clause to the Contracting Officer, unless elsewhere in this contract are established procedures for reporting the information; in the case of the Department of Defense, the Contractor shall report to the website at https://dibnet.dod.mil. For indefinite delivery contracts, the Contractor shall report to the Contracting Officer for the indefinite delivery contract and the Contracting Officer(s) for any affected order or, in the case of the Department of Defense, identify both the indefinite delivery contract and any affected orders in the report provided at https://dibnet.dod.mil.
- (2) The Contractor shall report the following information pursuant to paragraph (d)(1) of this clause
- (i) Within one business day from the date of such identification or notification: the contract number; the order number(s), if applicable; supplier name; supplier unique entity identifier (if known); supplier Commercial and Government Entity (CAGE) code (if known); brand; model number (original equipment manufacturer number, manufacturer part number, or wholesaler number); item description; and any readily available information about mitigation actions undertaken or recommended.
- (ii) Within 10 business days of submitting the information in paragraph (d)(2)(i) of this clause: any further available information about mitigation actions undertaken or recommended. In addition, the Contractor shall describe the efforts it undertook to prevent use or submission of covered telecommunications equipment or services, and any additional efforts that will be incorporated to prevent future use or submission of covered telecommunications equipment or services.

(e) *Subcontracts*. The Contractor shall insert the substance of this clause, including this paragraph (e) and excluding paragraph (b)(2), in all subcontracts and other contractual instruments, including subcontracts for the acquisition of commercial items.

(End of clause)

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IMPORTANT:	Mark all	packages and papers	with contrac	and/or or	der numbers.							1		2	
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ORDER FOR SUPPLIES OR SERVICES SCHEDULE - CONTINUATION

PAGE NO

2

IMPORTANT: Mark all packages and papers with contract and/or order numbers.

DATE OF ORDER 06/20/2019

CONTRACT NO.

68HERC19D0003

ORDER NO. 68HERC19F0194

ITEM NO. SUPPLIES/SERVICES QUANTITY UNIT UNIT AMOUNT QUANTITY ORDERED PRICE (e) ACCEPTED (d) (a) (b) (c) (g) Admin Office: CPOD US Environmental Protection Agency 26 West Martin Luther King Drive Mail Code: NWD Cincinnati OH 45268 Accounting Info: 19-20-c-262s000-000f84-2532-26A5c-19262sc908 -001 BFY: 19 EFY: 20 Fund: C Budget Org: 262S000 Program (PRC): 000F84 Budget (BOC): 2532 Cost: 26A5C DCN - Line ID: 19262SC908-001 Period of Performance: 06/20/2019 to 06/19/2020 0001 357,353.00 NEW HHRA Contract #TBD Task Order 0015 \$357,353.00

TOTAL CARRIED FORWARD TO 1ST PAGE (ITEM 17(H))

PERFORMANCE WORK STATEMENT Contract No. 68HERC19D0003 Task Order 68HERC19F0194

Title: General Support of NCEA's Human Health Assessment Activities

Specify Section & Paragraph SOW: A. Assessment Issues and Documents

Period of PERFORMANCE: CO award – 12 Months

I. PURPOSE

The purpose of this task order is to provide services to the U.S. Environmental Protection Agency's (EPA) National Center for Environmental Assessment (NCEA), Office of Research and Development (ORD), in supporting the development of health assessments.

II. <u>BACKGROUND</u>

The Environmental Protection Agency's (EPA) National Center for Environmental Assessment (NCEA) provides scientific leadership for evaluating human health and ecological risks associated with exposure to physical, chemical, and biological stressors, including environmental pollutants. NCEA relies upon external exports to support its mandated function of effectively analyzing, synthesizing, and communicating information in support of EPA's mission to protect human health and the environment.

III. STATEMENT OF WORK

A. Objective

The objective of this task order is to assist the NCEA in developing toxicological reviews, health assessments, and other related assessment materials. Contractor support will be requested to assist in the development of products that contribute to the development of chemical assessments and inform risk management decisions in support of EPA's program and regional offices.

B. Specific Requirements (Tasks)

Task 1: Establish Communication

Within 3 days of the start date of this TO, the Contractor shall schedule a conference call (not to exceed 1 hour) with the TOPO and appropriate contractor staff to clarify outstanding questions and to review specific tasks. The TOPO will submit the work requests via a Technical Directive Form. This form will be used as instructions to the contractor and will be submitted with each request. Copies of all correspondence pertaining to the performance of this task order shall be sent to the PO.

Within 3 days of modification, the Contractor shall schedule a conference call (not to exceed 1 hour) with the TOPO and appropriate contractor staff to clarify outstanding questions and to review additional tasks.

Delivery Schedule: Conference call scheduled within 3 days after receipt of task order.

Task 2. Quality Assurance Project Plan (QAPP)

The Contractor shall develop a QAPP for this PWS. The QAPP shall be submitted for approval. The Contractor shall not perform any work under this PWS until the QAPP is reviewed and approved by the TOPO and Quality Assurance Manager.

The contractor must ensure that all data collected, generated or used are of the appropriate type and quantity needed and of known, documented, and adequate quality. This statement of applicability conforms to the Agency's requirements. The Contractor must submit a QAPP that addresses data generation, collection, use, and analysis. The QAPP should include a description of quality control checks to verify accuracy, completeness, and adherence to established format. The Contractor must address in the QAPP how existing data will be considered for the task order. Existing (secondary) data is defined as the use of data that was developed for a different purpose and includes data in the published literature. The QAPP shall be in conformance with EPA's Requirements for Quality Assurance Project Plans (EPA QA/R-5). Guidance for developing QAPPs that meet EPA specifications prepared for activities conducted by or funded by EPA, are available online at http://www.epa.gov/quality/qa_docs.html, see "EPA Requirements for Quality Assurance Project Plans (QA/R-5)".

The Contractor shall update the current Quality Assurance Project Plan (QAPP) to include the additional tasks.

Delivery Schedule: Due 15 days after issuance of the task order.

Task 3: Systematic Review Support of NCEA's Health Assessment Activities

Specific direction will be provided by the EPA TOPO through Technical Direction. It is expected that there will be approximately (5) technical directive for this task. For each technical directive, the Contract shall develop a workplan describing the proposed strategy and approach to address each technical directive.

Subtask 1. Literature searching

- Develop search strategies in close collaboration with the EPA assessment team and HERO staff (as needed).
- Perform and update electronic search using specified bibliographic databases listed in the IRIS Handbook and any other assessment-specific databases as needed.
- Use additional search strategies as identified in the IRIS Handbook, including (but not limited to), reviewing reference list of included studies, reviewing reference list of pertinent reviews or other assessments, or "forward" and "backward" searching based on articles identified as key studies.

Subtask 2. Screening references for relevance

- Conduct title/abstract (10,000 records) and full-text screening (2,000 records) with appropriate tagging of studies as outlined in the IRIS Handbook using DistillerSR software or similar software application. The tagging structure may need to be customized for each assessment (in consultation with EPA assessment team).
- Use machine-learning software tools as directed to expedite screening.
- Update HERO project page and HAWC project page (as needed) with chemical-specific tags.

Subtask 3. Developing literature inventories

- In consultation with EPA assessment team, summarize studies considered relevant after full-text review using DistillerSR forms or similar structured entry format.
 - o For animal studies the following information are typically captured: chemical form (parent or metabolite), study type (e.g., acute, subchronic, developmental, etc.), duration of treatment,

- route, species, strain, sex, dose or concentration levels tested, dose units, health system and specific endpoints assessed, and a summary of findings at the health system level (null or NOEL/LOEL with an indication of which specific endpoints were affected).
- o For epidemiologic studies the following information are typically captured: chemical form, population type (e.g., general population-adult, occupational, pregnant women, infants and children, etc.), study type (e.g., cross-sectional, cohort, case-control), short free text description of study population, sex, major route of exposure (if known), description of how exposure was assessed, health system and specific outcome assessed, and a summary of findings at the health system level (null or an indication of any associations found and a description of how the exposure was quantified in the analysis). Instructions on which endpoints will under further analysis and extraction are also collected at this point.
- Literature inventories for mechanistic studies may also be needed but the specific format may be chemical-specific
- Provide EPA assessment team with excel files from SR review tools (e.g., DistillerSR) in a format that is appropriate for visualization of results in Tableau, Qlik Sense, or similar application.

Subtask 4. Study Quality Evaluation and Data Extraction

- Conduct study quality evaluation for human (500 records), animal (500 records), and mechanistic studies (50 studies) in HAWC (or other similar tool) deemed relevant for inclusion into a chemical assessment or associated product.
- Conduct data extraction into HAWC (or other similar tool) for human (125 records), animal (125 records), and mechanistic studies (12 studies) deemed relevant for inclusion into a chemical assessment or associated product.

Subtask 5. Documenting the methods, results, and literature search strategy

- In consultation with EPA assessment team, document the results of the activities undertaken described within this task. This may include:
 - Preparing method description of SR methods and results using an example or template provided by EPA;
 - o Documenting search strings, results (number of citations), and date of searches;
 - o Providing tabular summaries of the literature search strategy; and
 - o Creating and revising literature search flow diagrams in power point and create literature inventory tree in HAWC.

Delivery Schedule: Deliverable schedule will be defined in the technical direction.

IV. EPA CONTACT INFORMATION

Copies of all correspondence pertaining to the performance of this task order shall be sent to the CL-COR.

TOCOR
Dahnish Shams
202-564-2758
shams.dahnish@epa.gov

AMENDMENT OF SOLICITATION/MODIFICA	ATION OF CONTE	RACT	CONTRACT ID CODE	PAGE	OF PAGES
2. AMENDMENT/MODIFICATION NO.	3. EFFECTIVE DATE	LAB	EQUISITION/PURCHASE REQ. NO.	1 1	NO. (If applicable)
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FAIRFAX VA 220316050			10A. MODIFICATION OF CONTRACT/ORDEF	R NO.	
		x	68HERC19D0003		
			68HERC19F0194		
			10B. DATED (SEE ITEM 13)		
CODE 072648579	FACILITY CODE		06/20/2019		
	11. THIS ITEM ON	 LY APPLIES TO AMEN	DMENTS OF SOLICITATIONS		
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Items 8 and 15, and returning cop	pies of the amendment	; (b) By acknowledging	receipt of this amendment on each copy of the	offer submitted;	or (c) By
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X appropriation data, etc.) SET FORTE	TINTIEW 14, PURSUA	INT TO THE AUTHORI	11 OF FAR 45.105(b).		
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D. OTHER (Specify type of modification	and authority)				
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Except as provided herein, all terms and conditions of th	e document referenced	d in Item 9 A or 10A, as	heretofore changed, remains unchanged and	in full force and ef	fect.
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		TAT	illiam M. Yates		
15B. CONTRACTOR/OFFEROR	15C. I	DATE SIGNED 16	B. UNITED STATES OF AMERICA	ar agains a se	16C. DATE SIGNED
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	Obligated Amount for this Modification:				
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	Amount changed from \$357,353.00 to \$1,270,277.00				
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	Ending Fiscal Year				
	Fund (Appropriation) BT				
	Budget Organization 69A				
	Program (PRC) 000CD6				
	Budget (BOC) 2505				
	Job # (Site/Project) QT6E19ZZ				
	Cost Organization TC6EEBS				
	DCN-LineID 1969AC9042-001				
	Amount: \$179,832.85				
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	19-20-C-262S000-000F84-2532-26A5C-19262SC913-001				
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	Fund (Appropriation) C				
	Budget Organization 262S000				
	Program (PRC) 000F84				
	Budget (BOC) 2532				
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	Amount: \$25,893.00				
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	Program (PRC) 000FK9				
	Budget (BOC) 2532				
	Job # (Site/Project)				
	Cost Organization 26A5C				
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	Amount: \$35,096.00				
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	US Environmental Protection Agency				
	RTP-Finance Center (AA216-01)				
	109 TW Alexander Drive				
	www2.epa.gov/financial/contracts				
	Durham NC 27711				
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	US Environmental Protection Agency				
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8. NAME AND ADDRESS OF CONTRACTOR (No., street,	county. State and	ZIP Code)	. I9A	AMENDMENT OF SOLICITATION NO.			
ICF Incorporated, L.L.C. Attn: Robert Toth 9300 LEE HIGHWAY FAIRFAX VA 220316050	,	-	9B. 10A 6 8	DATED (SEE ITEM 11) . MODIFICATION OF CONTRACT/ORDER NOT HERC 19D0003 HERC 19F0194 5. DATED (SEE ITEM 13)	O.		
CODE 072648579	FACILITY COD	<u> </u>		6/20/2019			
0/20403/3				ENTS OF SOLICITATIONS			
CHECK ONE A. THIS CHANGE ORDER IS ISSUED FORDER NO. IN ITEM 10A.	ODIFICATION OF PURSUANT TO: ET/ORDER IS MI I IN ITEM 14, PU	(Specify authority) THE CONTRIBET TO REFLECT THE ROUANT TO THE AUTHOR	. IT MC CHANG HE ADI	ES SET FORTH IN ITEM 14 ARE MADE IN THE MINISTRATIVE CHANGES (such as changes in FAR 43.103(b).	SCRIBE	NTRACT	
D. OTHER (Specify type of modification	and authority)						
E. IMPORTANT: Contractor is not		o sign this document and		copies to the issuing			
E.IMPORTANT: Contractor Mis not 14. DESCRIPTION OF AMENDMENT/MODIFICATION (DUNS Number: 072648579 TOCOR: DSHAMS LIST OF CHANGES: Reason for Modification: The made to the Performance Work	Organized by U	Of this modi	uding s	ation will be to execut	le.)		nges
Total Amount for this Modified New Total Amount for this Ver New Total Amount for this Award Obligated Amount for this Mode New Total Obligated Amount for Continued	rsion: \$3 ard: \$1,4 dification or this 2	1,445,826.00 445,826.00 on: \$175,549. Award: \$1,445	,82		ull force	and effect	
15A. NAME AND TITLE OF SIGNER (Type or print)				NAME AND TITLE OF CONTRACTING OFFICE			
15B. CONTRACTOR/OFFEROR		15C. DATE SIGNED	16B. l		.ccyrc	ONIC	2. DATE SIGNED 3/25/2020
(Cignoture of paragraph authorized to aign)			1	(Signature of Contracting Officer)		-3-0.0	

 CONTINUATION SHEET
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NAME OF OFFEROR OR CONTRACTOR

M NO.	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
A)	(B)	(C)	(D)	(E)	(F)
	CHANGES FOR LINE ITEM NUMBER: 1				
	Obligated Property Countries Medicination				
	Obligated Amount for this Modification: \$175,549.00				
	\$173 , 343.00				
	NEW ACCOUNTING CODE ADDED:				
	Account code:				
	20-21-B-69A-000CD6-2505-TC6EEBS-2069AC2029-001				
	Beginning FiscalYear 20				
	Ending Fiscal Year 21				
	Fund (Appropriation) B				
	Budget Organization 69A				
	Program (PRC) 000CD6				
	Budget (BOC) 2505				
	Job # (Site/Project) QT6E19ZZ Cost Organization TC6EEBS				
	DCN-LineID 2069AC2029-001				
	Den Einerb 2005AC2025 001				
	Amount: \$150,000.00				
	NEW AGGOVERNO CODE ADDED				
	NEW ACCOUNTING CODE ADDED: Account code:				
	20-21-C-26D1000-000F84-2532-26A5C-2026D1C007-001				
	Beginning FiscalYear 20				
	Ending Fiscal Year 21				
	Fund (Appropriation) C				
	Budget Organization 26D1000				
	Program (PRC) 000F84				
	Budget (BOC) 2532				
	Job # (Site/Project)				
	Cost Organization 26A5C				
	DCN-LineID 2026D1C007-001				
	Amount: \$25,549.00				
	Amount. 923,343.00				
	Payment:				
	RTP Finance Center				
	US Environmental Protection Agency				
	RTP-Finance Center (AA216-01)				
	109 TW Alexander Drive				
	www2.epa.gov/financial/contracts				
	Durham NC 27711				
	Period of Performance: 06/20/2019 to 06/19/2020				

AMENDMENT OF SOLICITATION/MODIFICA	ATION OF CONTRACT		CONTRACT ID CODE	PA	AGE OF PAGES
2. AMENDMENT/MODIFICATION NO.	3. EFFECTIVE DATE	4. RE0	UISITION/PURCHASE REQ. NO.	5. PROJ	ECT NO. (If applicable)
P00003	 See Block 16C	PR-C	RD-20-00680		
6. ISSUED BY CODE	CAD	7. AD	MINISTERED BY (If other than Item 6)	CODE	CPOD
CAD US Environmental Protection 26 West Martin Luther King D Mail Code: W136 Cincinnati OH 45268-0001	-	26 Mai	D Environmental Protection West Martin Luther King l Code: NWD cinnati OH 45268	_	-
8. NAME AND ADDRESS OF CONTRACTOR (No., street,	county, State and ZIP Code)	(x) 9A	. AMENDMENT OF SOLICITATION NO.		
ICF Incorporated, L.L.C. Attn: Robert Toth 9300 LEE HIGHWAY FAIRFAX VA 220316050		9B x 10 6.	A. MODIFICATION OF CONTRACT/ORDER NB HERC19D0003 BHERC19F0194 B. DATED (SEE ITEM 13)	O.	
CODE 072648579	FACILITY CODE	$\exists \mid \Box$	6/20/2019		
	11. THIS ITEM ONLY APPLIES TO				
CHECK ONE A. THIS CHANGE ORDER IS ISSUED FORDER NO. IN ITEM 10A.	change an offer already submitted , su ce to the solicitation and this amendm tired) DDIFICATION OF CONTRACTS/ORDI TURSUANT TO: (Specify authority) TI TYORDER IS MODIFIED TO REFLEC IN ITEM 14, PURSUANT TO THE AL	ch change nent, and is et Inc ERS. IT M HE CHANG THE AD JTHORITY	may be made by letter or electronic communic. received prior to the opening hour and date space: CDIFIES THE CONTRACT/ORDER NO. AS DESCRIPTION OF FAR 43.103(b).	ation, provocecified. L 7 9 , 9 (SCRIBED	nided 07.00 IN ITEM 14.
D. OTHER (Specify type of modification	and authority)				
E. IMPORTANT: Contractor 🗵 is not	is required to sign this document	and return	copies to the issuing	g office.	
14. DESCRIPTION OF AMENDMENT/MODIFICATION (DUNS Number: 072648579 TOCOR: DSHAMS LIST OF CHANGES: Reason for Modification: The this amended requirement and Total Amount for this Modification CHANGES FOR LINE ITEM NUMBER Total Amount changed Continued Except as provided herein, all terms and conditions of the 15A. NAME AND TITLE OF SIGNER (Type or print)	purpose of this mo to add funding for cation: \$179,907.00	dific this 10A, as he	ation will be to exerci action.	se ye.	nd effect.
15B. CONTRACTOR/OFFEROR	15C. DATE SIGNED	16B.	UNITED STATES OF AMERICA	.ccyron	16C. DATE SIGNED
(Signature of person authorized to sign)				IGNATUI	

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 OF

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NAME OF OFFEROR OR CONTRACTOR

TEM NO.	SUPPLIES/SERVICES	QUANTITY		UNIT PRICE	AMOUNT
(A)	(B)	(C)	(D)	(E)	(F)
	Obligated Amount for this Modification:				
	\$179,907.00				
	NEW ACCOUNTING CODE ADDED:				
	Account code:				
	20-21-C-26D1000-000F84-2532-26A5C-2026D1C007-001				
	Beginning FiscalYear 20 Ending Fiscal Year 21				
	Fund (Appropriation) C				
	Budget Organization 26D1000				
	Program (PRC) 000F84				
	Budget (BOC) 2532				
	Job # (Site/Project)				
	Cost Organization 26A5C				
	DCN-LineID 2026D1C007-001				
	Amount: \$179,907.00				
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	Paragraphy				
	Payment: RTP Finance Center				
	US Environmental Protection Agency				
	RTP-Finance Center (AA216-01)				
	109 TW Alexander Drive				
	www2.epa.gov/financial/contracts				
	Durham NC 27711				
	Period of Performance: 06/20/2019 to 06/19/2020				

			ORDER	FOR SU	PPLIES OR SER	VICES						PAGE (OF PAGE	S
IMPORTANT:	Mark all	packages and pape	ers with contrac	ct and/or or	der numbers.							1		2
1. DATE OF ORI	DER	2. CONTRACT NO. (68HERC19D0)	(If any)							6. SHIP TO:	8	•		
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	18. SHIP	PING POINT			19. GROSS SHIPPING	3 WEIGHT	!		20. INVOICE NO.			L		17(h)
														TOTAL (Cont.
					1. MAIL INVOICE TO:									pages)
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			www2.ep	a.gov/	financial/co	ntrac	ts			600	\$80,437.00			TOTAL
	c. CITY						STATE	Т	e. ZIP CODE	¬ ¬ ¬ ¬ ¬ ¬ ¬ ¬ ¬ ¬ ¬ ¬ ¬ ¬ ¬ ¬ ¬ ¬ ¬	±3/	.00		
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		7	1.4	Sec. 1	10,000	SIGN	ATURE		TITLE: CONTRACTING	OKDEKING O	-FICI	EK		

ORDER FOR SUPPLIES OR SERVICES SCHEDULE - CONTINUATION

PAGE NO

2

 IMPORTANT: Mark all packages and papers with contract and/or order numbers.

 DATE OF ORDER
 CONTRACT NO.
 ORDER NO.

 06/20/2019
 68HERC19D0003
 68HERC19F0195

ITEM NO.	SUPPLIES/SERVICES	QUANTITY		UNIT	AMOUNT	QUANTITY
(a)	(b)	ORDERED (c)		PRICE (e)	(f)	ACCEPTED (g)
(a)	Admin Office:	(0)	(0)	(6)	(1)	(9)
	CPOD					
	US Environmental Protection Agency					
	26 West Martin Luther King Drive					
	Mail Code: NWD					
	Cincinnati OH 45268					
	0.594/1246/494 (0.504/1464/2464/0.4764/1464 (0.6444/4464) 1.504 (0.5444/4464) 1.504 (0.6444/4464)					
	Period of Performance: 06/20/2019 to					
	06/19/2020					
001	NEW HHRA Contract #TBD Task Order 0004				76,320.17	
	Accounting Info:					
	19-20-C-262S000-000F84-2532-26A5C-1926					
	2SC903-001 BFY: 19 EFY: 20 Fund: C					
	Budget Org: 262S000 Program (PRC):					
	000F84 Budget (BOC): 2532 Cost: 26A5C					
	DCN - Line ID: 19262SC903-001					
	Funding Flag: Complete					
	Funded: \$76,320.17					
002	We need to add an additional \$4,116.83 to				4,116.83	
	fully fund the Task Order					
	Accounting Info:					
	19-20-C-262S000-000F84-2532-26A5C-1926					
	2SC903-002 BFY: 19 EFY: 20 Fund: C					
	Budget Org: 262S000 Program (PRC):					
	000F84 Budget (BOC): 2532 Cost: 26A5C					
	DCN - Line ID: 19262SC903-002					
	Funding Flag: Complete					
	Funded: \$4,116.83					
	runded: \$4,116.83					

PERFORMANCE WORK STATEMENT Contract No. 68HERC19D0003 Task Order 68HERC19F0195

Title: General Support of the Health Assessment Workplace Collaborative (HAWC)

Specify Section & Paragraph SOW: A. Assessment Issues and Documents

Period of PERFORMANCE: CO award – [One Year After Award]

I. PURPOSE

The purpose of this task order is to provide services to the U.S. Environmental Protection Agency's (EPA) National Center for Environmental Assessment (NCEA), Office of Research and Development (ORD), in supporting the development of the Health Assessment Workplace Collaborative (HAWC) application.

II. <u>BACKGROUND</u>

EPA NCEA provides scientific leadership for evaluating human health and ecological risks associated with exposure to physical, chemical, and biological stressors, including environmental pollutants. NCEA relies upon databases and tools to execute its mandated function of effectively analyzing, synthesizing, and communicating information in support of EPA's mission to protect human health and the environment. One of those tools is the Health Assessment Workplace Collaborative (HAWC) application.

HAWC is a collaboration of several individuals and organizations who create, maintain, and enhance the functionalities of this tool. The lead developer of the project was Andy Shapiro, who created the prototype in partial fulfillment of the requirements for the degree of Master of Science in Public Health in the Department of Environmental Sciences and Engineering at the University of North Carolina at Chapel Hill under direction of Dr. Ivan Rusyn. Overall guidance on HAWC development is provided by a steering committee with representation from the National Toxicology Program at the National Institute of Environmental Health Sciences (NIEHS/NTP), Texas A&M University, and the National Center for Computational Toxicology of the Environmental Protection Agency (EPA/NCCT).

III. STATEMENT OF WORK

A. Objective

The HAWC database is changing daily as users add more data to assessments. The objective of this task order is to assist NCEA in developing the Health Assessment Workplace Collaborative (HAWC) application to serve the needs of EPA in producing health assessments.

B. Specific Requirements (Tasks)

Task 1: Establish Communication

Within 3 days of the start date of this TO, the Contractor shall schedule a conference call (not to exceed 1 hour) with the TOCOR and appropriate contractor staff to clarify outstanding questions and to review specific tasks. The TOCOR will submit the work requests via a "ticket." Approved tickets will be confirmed via email to the

Contractor and will be submitted with each request. Copies of all correspondence pertaining to the performance of this task order shall be sent to the CL-COR.

Within 3 days of any modification, the Contractor shall schedule a conference call (not to exceed 1 hour) with the TOCOR and appropriate contractor staff to clarify outstanding questions and to review additional tasks.

<u>Delivery Schedule</u>: Conference call scheduled within 3 days after receipt of task order.

Task 2. Quality Assurance Project Plan (QAPP)

The Contractor shall develop a QAPP for this PWS. The QAPP shall be submitted for approval. The Contractor shall not perform any work under this PWS until the QAPP is reviewed and approved by the TOCOR and Quality Assurance Manager.

The contractor must document in the QAPP details regarding application testing procedures and test results, document and validate source code as well as code version, document testing acceptance criteria, and verify the results are correct. (See these documents: "EPA Manual C/0 2105-P-01-0: EPA Quality Manual for Environmental Programs" and "EPA Requirements for Quality Assurance Project Plans (QA/R-5)"). The QAPP should contain all of the sections outlined in the EPA Requirements (QA/R-5) document. Section B headings can be edited to document software-specific quality assurance.

Delivery Schedule: Due 15 days after issuance of the task order.

Task 3: Support and Maintenance of HAWC

The Contractor shall provide support for the Health Assessment Workplace Collaborative (HAWC) application by maintaining code, fixing bugs, and developing new features. The Contractor shall provide the appropriate expertise to support ongoing HAWC development. The Contractor shall manage, identify, and recruit experts to support this task, as needed. Specific tasks EPA needs completed will be captured in "ticket" requests. The contractor shall identify, in coordination with EPA, project management tool, to manage and track tickets. Under this scheme, EPA staff will add ticket requests to Trello (or a similar software application), where the EPA TOCOR or Alternate TOCOR will approve the ticket and direct the contractor to initiate work on the ticket. ICF will address the approved tickets and will indicate when tickets are complete so the EPA TOCOR and Alternate TOCOR contact can close out requests in the internal EPA ticketing system for HAWC.

The Contractor shall classify EPA tickets as high, medium, and low level of effort items. Example tasks for each of these three categories include the following.

- High level of effort Creating new dosing regimens without creating new animal groups
- Medium level of effort Adding risk of bias overall confidence sorting to all visuals
- Low level of effort Adding "NA" as an option for the variance of an endpoint

The Contractor shall classify these tickets based on their priority level. As directed by the EPA TOCOR/Alt TOCOR, the Contractor should anticipate completing high priority tickets first, and focusing on longer-term ticket requests classified as low and medium level of effort. For the purposes of estimating costs, the Contractor should assume:

	High Priority Tickets	Lower Priority Tickets	Total Tickets
High Level of Effort	4	0*	4
Medium Level of Effort	5	16	21
Low Level of Effort	5	5	10
Total	14	21	35

^{*}The contractor shall not anticipate completing lower priority and high level of effort tickets prior to the end of work TO period of performance.

The Contractor will perform unit tests on all Python and JavaScript code using PyTest or a JavaScript unit testing framework chosen by the EPA where feasible. Alternatively, the Contractor will perform integration tests using Selenium. The Contractor will take additional steps based on these tests:

- For code that breaks existing tests, the Contractor will provide:
 - o A detailed explanation of why the new code needs to break the old test; and
 - o If appropriate, a modification of the test so that it passes in the new environment.
- For code that the Contractor cannot test due to technical limitations, the Contractor will provide:
 - o A detailed explanation of why ICF cannot test the code.

IV. EPA CONTACT INFORMATION

Copies of all correspondence pertaining to the performance of this task order shall be sent to the CL-COR.

TOCOR
Dahnish Shams
202-564-2758
shams.dahnish@epa.gov

Alt TOCOR Shane Thacker 919-541-5159 Thacker.shane@epa.gov

AMENDMEN	NT OF SOLICITATION/MODIFICA	ATION OF CO	ONTRACT		CONTRACT ID CODE	PAGE OF PAGES			
2. AMENDMEN	T/MODIFICATION NO.	3. EFFECTIVE	DATE	4. REQ	LUSITION/PURCHASE REQ. NO.	5. PROJECT	NO. (If applicable)		
P00001		 See Bloo	ck 16C				, ,,		
6. ISSUED BY	CODE	CPOD		7. ADI	MINISTERED BY (If other than Item 6)	CODE CE	OD		
26 West Mail Cod	conmental Protection Martin Luther King D le: W136 ati OH 45268-0001			26 Mai	D Environmental Protection West Martin Luther King l Code: NWD Dinnati OH 45268		У		
8. NAME AND A	ADDRESS OF CONTRACTOR (No., street,	, county, State and	ZIP Code) (x) 9A.	AMENDMENT OF SOLICITATION NO.				
ICF Incorporated, L.L.C. Attn: Robert Toth 9300 LEE HIGHWAY FAIRFAX VA 220316050					DATED (SEE ITEM 11) A. MODIFICATION OF CONTRACT/ORDER NOT THE RC 1 9 D 0 0 0 3 BHERC 1 9 F 0 1 9 5 B. DATED (SEE ITEM 13)	0.			
CODE 072	2648579	FACILITY COD	E	0	6/20/2019				
22 % 20	200	11. THIS ITI		I MENDIV	ENTS OF SOLICITATIONS				
OFFER. If by each letter or 12. ACCOUNTI See Sche	y virtue of this amendment you desire to a electronic communication makes referenced and APPROPRIATION DATA (If required as 13. THIS ITEM ONLY APPLIES TO MA. THIS CHANGE ORDER IS ISSUED FORDER NO. IN ITEM 10A.	change an offer a nee to the solicita uired) ODIFICATION O	already submitted , such continuous and this amendment, Net F CONTRACTS/ORDERS. (Specify authority) THE Contracts	hange and is Dec . IT MC	IND DATE SPECIFIED MAY RESULT IN REJEMBY be made by letter or electronic communicate received prior to the opening hour and date sprease: ODIFIES THE CONTRACT/ORDER NO. AS DESIGNED SET FORTH IN ITEM 14 ARE MADE IN THE MINISTRATIVE CHANGES (such as changes in OF FAR 43.103(b).	ation, provided ecified. 680, 437 SCRIBED IN I	. 00 TEM 14.		
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E. IMPORTANT 14. DESCRIPT DUNS Num TOCOR: D	ion of amendment/modification (ber: 072648579	9.	o sign this document and CF section headings, inclu		copies to the issuing olicitation/contract subject matter where feasib				
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				Wil	liam M. Yates				
15B. CONTRAC	CTOR/OFFEROR		15C. DATE SIGNED	16B.	JNITED STATES OF AMERICA		16C. DATE SIGNED		
(-	Signature of person authorized to sign)			-	(Signature of Contracting Officer)				

 CONTINUATION SHEET
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NAME OF OFFEROR OR CONTRACTOR

TEM NO.	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
(A)	(B)	(C)	(D)	(E)	(F)
	Total Amount for this Modification: -\$80,437.00				
	CHANGES FOR LINE ITEM NUMBER: 2				
	Total Amount changed from \$4,116.83 to \$0.00				
	Obligated Amount for this Modification: -\$4,116.83				
	CHANGES FOR ACCOUNTING CODE:				
	19-20-C-262S000-000F84-2532-26A5C-19262SC903-002				
	Amount changed from \$4,116.83 to \$0.00				
	Percent changed from 100 to 0				
	CHANGES FOR LINE ITEM NUMBER: 1				
	Total Amount changed from \$76,320.17 to \$0.00				
	Obligated Amount for this Modification:				
	-\$76,320.17				
	CHANGES FOR ACCOUNTING CODE:				
	19-20-C-262S000-000F84-2532-26A5C-19262SC903-001				
	Amount changed from \$76,320.17 to \$0.00				
	Percent changed from 100 to 0				
	Payment:				
	RTP Finance Center US Environmental Protection Agency				
	RTP-Finance Center (AA216-01)				
	109 TW Alexander Drive				
	www2.epa.gov/financial/contracts				
	Durham NC 27711				
	Period of Performance: 06/20/2019 to 06/19/2020				

AMENDMENT OF SOLICITATION/MODIFIC	CATION OF CO	NTRACT		CONTRACT ID CODE	F	PAGE OF PAGES
2. AMENDMENT/MODIFICATION NO.	3. EFFECTIVE	DATE 4	I. REQ	UISITION/PURCHASE REQ. NO.	5. PRO	JECT NO. (If applicable)
P00002	See Bloc	·k 16C	R-0	RD-19-00774		, , , , ,
6. ISSUED BY CODE	_		7. ADN	INISTERED BY (If other than Item 6)	CODE	CPOD
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US Environmental Protection	Agency	τ	US E	Environmental Protection	n Age	ency
26 West Martin Luther King	Drive		26 V	West Martin Luther King	Driv	<i>j</i> e
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Cincinnati OH 45268-0001			Cin	cinnati OH 45268		
8. NAME AND ADDRESS OF CONTRACTOR (No., stree	et, county, State and I	ZIP Code) (,	. 9A.	AMENDMENT OF SOLICITATION NO.		
		<u> </u>	*)			
ICF Incorporated, L.L.C.						
Attn: Robert Toth			9B.	DATED (SEE ITEM 11)		
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FAIRFAX VA 220316050		×	104	. MODIFICATION OF CONTRACT/ORDER NO HERC19D0003	Э.	
				HERC19F0195 DATED (SEE ITEM 13)		
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CODE 072648579				6/20/2019		
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D. OTHER (Specify type of modification	n and authority)					
E. IMPORTANT: Contractor 🗵 is not	is required to	sign this document and r	eturn	copies to the issuing	office.	
14. DESCRIPTION OF AMENDMENT/MODIFICATION DUNS Number: 072648579 TOCOR: DSHAMS LIST OF CHANGES:	(Organized by UC	CF section headings, inclu	iding s	olicitation/contract subject matter where feasib	le.)	
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Except as provided herein, all terms and conditions of t	the document refer	enced in Item 9 A or 10A,	as her	etofore changed, remains unchanged and in fu	ull force	and effect.
15A. NAME AND TITLE OF SIGNER (Type or print)			16A. I	NAME AND TITLE OF CONTRACTING OFFIC	ER (Typ	e or print)
			Wil	liam M. Yates		
15B. CONTRACTOR/OFFEROR	1	15C. DATE SIGNED		INITED STATES OF AMERICA		16C. DATE SIGNED
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NO.	SUPPLIES/SERVICES	QUANTITY	0 1	UNIT PRICE	AMOUNT
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	Obligated Amount for this Modification: \$80,437.00				
	New Total Obligated Amount for this Award:				
	\$80,437.0				
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	CHANGES FOR LINE ITEM NUMBER: 1				
	Total Amount changed				
	from \$0.00 to \$80,437.00				
	Obligated Amount for this Modification: \$80,437.00				
	CHANGES FOR DELIVERY LOCATION: ORD/OARS/EMD/CIN				
	Amount changed from \$0.00 to \$80,437.00				
	NEW ACCOUNTING CODE ADDED:				
	Account code:				
	19-20-C-262S000-000F84-2532-26A5C-19262SC903-001				
	Beginning FiscalYear 19				
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	Fund (Appropriation) C				
	Budget Organization 262S000				
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	Program (PRC) 000F84				
	Budget (BOC) 2532				
	Job # (Site/Project)				
	Cost Organization 26A5C				
	DCN-LineID 19262SC903-001				
	Quantity: 0				
	Amount: \$80,437.00				
	Percent: 0				
	Subject To Funding: N				
	Payment Address:				
	RTP Finance Center				
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	US Environmental Protection Agency				
	RTP-Finance Center (AA216-01)				
	109 TW Alexander Drive				
	www2.epa.gov/financial/contracts				
	Durham NC 27711				
	Payment:				
	RTP Finance Center				
	US Environmental Protection Agency				
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	RTP-Finance Center (AA216-01)				
	109 TW Alexander Drive				
	www2.epa.gov/financial/contracts				
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ICF Incorporated, L.L.C.						
Attn: Robert Toth			9B.	DATED (SEE ITEM 11)		
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RECEIVED AT THE PLACE DESIGNATED FOR THE OFFER. If by virtue of this amendment you desire to each letter or electronic communication makes referent 2. ACCOUNTING AND APPROPRIATION DATA (If required See Schedule	change an offer and offer	already submitted , such co ation and this amendment,	hange and is	may be made by letter or electronic communica received prior to the opening hour and date sp	ation, prov ecified.	ided
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D. OTHER (Specify type of modification	and authority)					
E. IMPORTANT: Contractor X is not	is required t	o sign this document and	return	copies to the issuing	g office.	
14. DESCRIPTION OF AMENDMENT/MODIFICATION DUNS Number: 072648579 TOCOR: DSHAMS LIST OF CHANGES: Reason for Modification: The the following statement:	purpose	of this admi	nis	crative modification is	•	ncorporate
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ICF has reviewed the task or	_			·-		=
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Except as provided herein, all terms and conditions of the	ne document refe	renced in Item 9 A or 10A				
15A. NAME AND TITLE OF SIGNER (Type or print)			16A. I	NAME AND TITLE OF CONTRACTING OFFICE	CER (Type	or print)
			Wil	liam M. Yates		
15B. CONTRACTOR/OFFEROR		15C. DATE SIGNED	16B. I	JNITED STATES OF AMERICA		16C. DATE SIGNED
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NAME OF OFFEROR OR CONTRACTOR

EM NO.	SUPPLIES/SERVICES	QUANTITY	0 %	UNIT PRICE	AMOUNT
A)	(B)	(C)	(D)	(E)	(F)
	delivery requirements qualify as limited rights				
	data or restricted computer software and are				
	identified as follows, consistent with ICF;s				
	original representation and declaration at the				
	solicitation stage:				
	¿ ICF's automated data management system referred to as litstreamTM (formerly DRAGON) supports	ed			
	systematic reviews of scientific literature and				
	can be used as a tool to help manage the results				
	of literature searches.				
	¿ ICF's tool referred to as DoCTER can be used	LO			
	help analyze the large result sets returned by				
	literature searches using natural language				
	process with clustering, machine learning and				
	deep learning algorithms.				
	¿ With the exception of the limited license				
	rights granted in the resulting contract, ICF or				
	its licensors retains any and all ownership,				
	title, interest, etc., in listreamTM, DoCTER, or				
	related intellectual property, including, but not				
	limited to, any supporting applications such as				
	API webservices enabling communication with				
	external data systems or any resulting				
	modifications or feature enhancements within				
	existing applications to support the task order				
	data delivery requirements.				
	Payment:				
	RTP Finance Center				
	US Environmental Protection Agency				
	RTP-Finance Center (AA216-01)				
	109 TW Alexander Drive				
	www2.epa.gov/financial/contracts				
	Durham NC 27711				
	Period of Performance: 06/20/2019 to 06/19/2020				
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X C. THIS SUPPLEMENTAL AGREEMEN D. OTHER (Specify type of modification		O AUTHORI	TY OF:		
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14. DESCRIPTION OF AMENDMENT/MODIFICATION DUNS Number: 072648579 TOCOR: DSHAMS LIST OF CHANGES: Reason for Modification: The ending date of the period of related to PCBs, MeHg, and P Period Of Performance End Da	e purpose of this performance in or FAS.	admini:	olicitation/contract subject matter where feasing strative mod is to add complete the ongoing e	ible.) 3-Month	
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15B. CONTRACTOR/OFFEROR	15C. DATE SIGNE		JNITED STATES OF AMERICA	LECTRONIC	16C. DATE SIGNED
(Signature of person authorized to sign)		- 7.7	(Signature of Contracting Officer)	SIGNATURE	05/13/2020

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NAME OF OFFEROR OR CONTRACTOR

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A)	(B)	(C)	(D)	(E)	(F)
	Payment:				
	RTP Finance Center				
	US Environmental Protection Agency				
	RTP-Finance Center (AA216-01)				
	109 TW Alexander Drive				
	www2.epa.gov/financial/contracts				
	Durham NC 27711				
	Period of Performance: 06/20/2019 to 09/19/2020				
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			ORDER FO	R SUI	PPLIES OR SERV	ICES					PAGE (OF PAGES	
IMPORTANT:	Mark all	packages and papers w	ith contract an	d/or ord	der numbers.						1		2
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ORDER FOR SUPPLIES OR SERVICES **SCHEDULE - CONTINUATION**

IMPORTANT: Mark all packages and papers with contract and/or order numbers.

PAGE NO

2

DATE OF ORDER CONTRACT NO. ORDER NO. 68HERC19D0003 68HERC19F0199 06/25/2019 ITEM NO. SUPPLIES/SERVICES QUANTITY UNIT UNIT **AMOUNT** QUANTITY ACCEPTED ORDERED PRICE (d) (a) (b) (c) (e) (g) Admin Office: CPOD US Environmental Protection Agency 26 West Martin Luther King Drive Mail Code: NWD Cincinnati OH 45268 Period of Performance: 06/25/2019 to 06/24/2020 0001 NEW Human Health Risk Assessment Contract 140,928.00 #TBD 68HE0C18R001 - TO-0008 OPP AD/HED Tech Support: The funding with provide HED with 438 Labor Hours that will support Statistical Analysis; Quick Response; HSRB support AHETF closed system; SAS support for REJV queries; SAS support for pesticide residue modeling; dietary exposure modules;epidemiology study review; analysis of decomposition procedures and probabilistic assessments; SAP recommendations for efficacy testing; quick response; and project management. POP 5/1/2019 thru 4/30/2020 Requisition No: PR-OCSPP-19-00240, PR-ORD-19-00973 Accounting Info: 19-P-32JP01N-000CJ1-2505-QF320100-1932 HED017-001 BFY: 19 Fund: P Budget Org: 32JP01N Program (PRC): 000CJ1 Budget (BOC): 2505 Job #: QF320100 DCN - Line ID: 1932HED017-001 Funding Flag: Complete Funded: \$77,538.70 Accounting Info: 19-20-B-32AP16Y-000CJ1-2505-QP320200-1 932AD0018-001 BFY: 19 EFY: 20 Fund: B Budget Org: 32AP16Y Program (PRC): 000CJ1 Budget (BOC): 2505 Job #: QP320200 DCN - Line ID: 1932AD0018-001 Funding Flag: Complete Funded: \$63,389.30 \$140,928.00

TOTAL CARRIED FORWARD TO 1ST PAGE (ITEM 17(H))

PERFORMANCE WORK STATEMENT TECHNICAL SUPPORT FOR HUMAN HEALTH RISK ASSESSMENT TO 68HERC19F0199

I: TITLE: OPP AD Tech Support Human Health Risk Assessment

II: BACKGROUND

Pesticides are chemicals that are deliberately introduced into the environment for a specific purpose. As specified by the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) and the Federal Food, Drug, and Cosmetic Act (FFDCA) as amended by the Food Quality Protection Act (FQPA) and as modified by the Pesticide Registration Improvement Act (PRIA), a pesticide may be registered if its use will not result in unreasonable risks or unreasonable adverse effects to human health or the environment. The risks in this case are a combination of the inherent toxicity of the pesticide and the extent to which people are exposed to it. The goal of risk assessment is to provide an accurate and realistic picture of risks associated with human exposure to the pesticide. Companies which register pesticides (registrants) submit studies to the Environmental Protection Agency (EPA) that characterize and quantify the potential toxicity of pesticides and human exposures resulting from prescribed use of a given pesticide product. Submitted exposure studies, may focus on either occupational (e.g., mixer/loader/applicator or post-application/reentry) or on residential exposures, are used by EPA for calculation of total body exposure for a given pesticide-use scenario. Toxicity studies may focus on the elaboration and quantification of potential health effects of pesticides typically using animal models.

The Human Studies Review Board (HSRB or Board) is a Federal advisory committee operating in accordance with the Federal Advisory Committee Act (FACA) 5 U.S.C. App.2 § 9. The HSRB provides advice, information, and recommendations on issues related to scientific and ethical aspects of human subjects research which is a critical consideration if humans are involved in either toxicological or exposure research and EPA intends to use that research in an evaluation of a chemical. The major objectives are to provide advice and recommendations on: a. research proposals and protocols; b. reports of completed research with human subjects; and c. how to strengthen EPA's programs for protection of human subjects of research. The HSRB reports to the EPA Administrator through EPA's Science Advisor.

Before relying on the human studies data, EPA must evaluate submitted studies to determine their adequacy according to HSRB procedures if applicable. HSRB procedures, should they apply, require studies are submitted for review through the HSRB and that EPA address any questions or concerns the HSRB may have with the data. Meeting minutes, reports, and past evaluations are provided on EPA's HSRB website: http://www.epa.gov/hsrb/

III: PURPOSE

The purpose of this procurement is to provide technical expertise for the review and evaluation of various types of data to assist EPA in meeting its legislative mandates. To support EPA's OPP, the contractor shall, upon request, perform a full review and evaluate various data submitted to support pesticide registration.

The contractor shall supply the necessary resources required for the performance of this contract. The scientific quality of reviews, assessments, reports, model tools, statistical programs and software, and their timely preparation in accordance with negotiated schedules, are of paramount importance in the performance of this contract.

IV: GENERAL REQUIREMENTS

To perform task orders under this contract, the contractor may require access to FIFRA Confidential Business Information (FIFRA CBI) submitted by pesticide registrants to EPA. Disclosure of FIFRA CBI to contractors is provided for under Section 10(e) of FIFRA and in 40 CFR 2.307. Consequently, the contractor must be cleared for access to FIFRA CBI and must control FIFRA CBI according to the requirements specified for contractors in the EPA publication, "FIFRA Information Security Manual", dated July 1988. Access of the contractor to FIFRA CBI is intermittent and will not require allocation of office space. Identification of contractor personnel will be made by EPA while on site at EPA.

Control measures for protecting FIFRA CBI shall be in accord with the following sections of the Security Manual:

- "Disclosure of FIFRA CBI to contractors," Section 3;
- "Procedures for Gaining Access to FIFRA Sensitive Information," Section 4; and
- "Operational Procedures for Protecting FIFRA Sensitive Information," Section 5.

The contract, as written, shall incorporate certain clauses that describe actions to be taken by the contractor with regard to FIFRA sensitive information; these clauses are contained in 40 CFR 2.301 (h)(23)(ii), and are Exhibit 6 in the Security Manual.

In evaluating and performing services required under this Task Order (TO), the contractor shall submit all relevant information used in developing conclusions or options to the cognizant Task Order Contracting Officer Representative (TOCOR) for all projects for review and approval.

All reports, drafts, papers etc. prepared by the contractor shall be submitted in draft form. The contractor shall submit the competed draft to the TOCOR for review and approval. The drafts submitted shall include copies of the literature cited or make reference to all citations in the document for TOCOR verification and approval.

When in attendance at meetings, the contractor's attendance shall be limited to that portion of the activity for which the contractor is required in order to meet the requirements of the SOW. The contractor personnel shall identify themselves as contractor personnel in all activities associated with work performed under the SOW, and in attendance at meetings in conjunction with activities with the SOW requirements.

Reports submitted by the contractor that contain recommendations to the Agency (which will be used by EPA personnel in developing policy), will explain and rank policy or action alternatives, if any; describe the procedures used to arrive at recommendations, summarize the substance of deliberation; report any dissenting views; list the sources relied upon; and make clear the methods and considerations upon which the recommendations are based.

V: SCOPE OF WORK

The contractor shall supply the necessary labor, materials, equipment, services and facilities (except as otherwise specified) required for the performance of each task order. The scientific quality of assessments and reports and their timely preparation in accordance with negotiated schedules are of paramount importance in the performance of this contract. Consequently, the contractor shall have the necessary technical and scientific

knowledge and experience to work effectively from contract start-up and throughout the course of the contract. In addition, the contractor shall have a Quality Assurance (QA) / Quality Control (QC) program that maintains the quality of products. Performance of work under this WA will encompass tasks in statistical evaluation of data pertinent to the EPA risk assessment process including exposure and toxicology data.

VI:SPECIFIC AREAS OF WORK

The Contractor shall provide all technical support within the scope of this Performance Work Statement (PWS). The Contractor shall perform tasks, as specified by individual task orders issued by the Contract Officer (CO), in the following program areas: Statistical Review and Analysis of Human Health Exposure and Toxicity Data

The task(s) which will be issued through task orders require expertise in statistics, biostatistics, and mathematical simulation and modeling. For many tasks, scientific needs are highly specialized, requiring expert personnel having the knowledge and ability to fully and critically evaluate study methodologies and results in the technical disciplines identified above. Analyses must be scientifically sound and sufficiently documented to withstand intensive critical examination and review by other experts in the relevant disciplines.

TASK 1: PROJECT MANAGEMENT

The Contractor shall provide a Project Manager. The Contractor Project Manager shall report on all aspects of the objectives and progress of this contract to the designated CO and CORs via email, through monthly reports. The Project Manager plans, conducts and supervises Task Order projects, necessitating advanced knowledge and the ability to originate and apply new and unique methods and procedures. The Project Manager provides technical advice and counsel to other professionals. The Contractor Project Manager shall notify via email the relevant COR/ACOR or Task Order COR of any significant difficulties in accomplishing the task listed in the Task Orders.

TASK 2: STATISTICAL ANALYSIS SUPPORT

The contractor shall provide statistical support for analyses of exposure and toxicology data pertinent for human health risk assessment of pesticides. For example, the contractor shall review and analyze statistical methods for assessing unit exposures for dermal and inhalation monitoring data for pesticide applicators as well as data associated with a variety of toxicology studies to potentially include toxico-kinetic and other modelling exercises.

Verification of the statistical analysis is an integral part of the data evaluation process. As such, contractors shall routinely analyze, report, interpret, and summarize statistical results including but not limited to: basic summary statistics, parametric and non-parametric hypothesis testing (e.g. Dunnett's test, Williams'/Shirley test, Jonckheere-Terpstra test, etc.), and linear and nonlinear regressions. Types of statistical analyses and reporting also include, but are not limited to, exposure task force (e.g., Agricultural Handler Exposure Task Force and Antimicrobial Exposure Assessment Task Force) monitoring objective of a relative 3-fold accuracy (i.e., geometric mean, arithmetic mean, and 95th percentile be accurate within 3-fold with 95 percent confidence); reviewing sample size and study design; calculating normalized unit exposures using and comparing empirical estimates, simple random sample estimates, as well as a hierarchical variance component modeling estimates; testing the exposure results for proportionality between exposure and pounds of active

ingredient handled including the threshold associated with amount handled; and evaluation of dose response data from toxicological research.

Evaluations shall state which methods of statistical comparison were used and why the methods were appropriate regardless of the type of data evaluated. They shall also include explanations about the relationship between the doses of the test substance and the presence or absence, incidence, and extent of any type of trend or effect. The contractor shall be able to provide both basic and advanced statistical support for all types of environmental data. Additional examples of statistical support include Bayesian and probabilistic, design of experiments, power analysis, mixed models, time series analysis, multivariate statistics, and categorical data analysis. As requested by the Contractor Officer's Representative (COR), the contractor shall provide feedback and recommendations to the Agency pertaining to the appropriate use and application of various statistical methodologies.

Determine exposure or potential exposure from pollution/contaminant sources (including background levels) by evaluating measured or modeled biological, chemical, or physical concentrations or gradients at the interface between an organism and an environmental medium of concern, as specified in individual task orders. Estimate internal doses and target organ doses of chemicals. Evaluation of PBPK modeling approaches using a computer language such as "R" may also be required.

The contractor shall also have experience using data analysis software such as SAS for pesticide residue modeling. The contractor shall be able to provide statistical support regarding dietary exposure models and protocol/study reviews.

TASK 3: QUICK RESPONSE AND AGENCY INTERFACE ACTIVITIES

The contractor shall provide quick turn-around support for special requests by EPA as defined in previous tasks. The contractor shall provide support for special requests by EPA. Quick response tasks may include, but are not limited to, updating NHANES (National Health and Nutrition Examination Survey) assessments, reviewing/commenting on statistical analyses performed in scientific publications, activities involving EPA's interface with other Governmental agencies, providing input on best statistical methods to be used in human health risks assessments, and any other quick-response requests from EPA to the extent that such requests are feasible and relate to this Statement of Work.

VII. DELIVERABLES

- **A. Task Reports:** All reports, documents, papers, and data end-points etc., prepared/compiled by the contractor shall be submitted electronically in draft form using agency standard software, science industry standard software, and/or OPP science data repository/workflow portal, or other storage media as specified in the task assignment. The contractor shall provide the reviews in electronic format (MS Word and/or PDF) delivered by email or other electronic portal or as CD or flash drive, and in hard copy if requested by the TOCOR, COR or CO.
- **B. Other Services:** In performing the services required under this PWS, the contractor shall submit all relevant information used in developing conclusions or options to the COR for all projects for evaluation review and approval. All software and databases developed or enhancements or modifications of existing software or databases performed under this contract; all documentation, notes, preceding versions; all other

material pertaining to the development, enhancement, modification and testing of the software and/or databases; and all information and data populating associated databases shall be the property of the agency; will be delivered to the agency upon request or at completion of the task; and cannot be used by the contractor for any other purpose than that specified in a task order without prior written permission by the CO.

VIII: TASK ORDER CONTRACTING OFFICER REPRESENTATIVE

Diana Hsieh
Risk Assessment and Science Support Branch, AD, OPP
U.S. Environmental Protection Agency
2777 South Crystal Drive
Arlington, VA 22202
Phy 702 247 0206

Ph: 703-347-0296 Fx: 703-308-8481

Email: Hsieh.diana@epa.gov

Alternate Task Order Contracting Officer Representative:

Lori Brunsman
U.S. Environmental Protection Agency
2777 South Crystal Drive
Arlington, VA 22202
Science Information and Management Branch, HED, OPP

Ph: 703-308-2902

Email: Brunsman.lori@epa.gov

AMENDMENT OF SOLICITATION/MODIFICA	ATION OF CONTRACT		CONTRACT ID CODE	PAGE	OF PAGES				
2. AMENDMENT/MODIFICATION NO.	3. EFFECTIVE DATE	4. REQ	UISITION/PURCHASE REQ. NO.	5. PROJECT	NO. (If applicable)				
P00001	 See Block 16C								
6. ISSUED BY CODE	CAD	7. ADN	INISTERED BY (If other than Item 6)	CODE CP	OD				
CAD US Environmental Protection 26 West Martin Luther King D Mail Code: W136 Cincinnati OH 45268-0001	US E 26 Wai:	CPOD US Environmental Protection Agency 26 West Martin Luther King Drive Mail Code: NWD Cincinnati OH 45268							
8. NAME AND ADDRESS OF CONTRACTOR (No., street,	county, State and ZIP Code)	(x) 9A.	AMENDMENT OF SOLICITATION NO.						
ICF Incorporated, L.L.C. Attn: Robert Toth 9300 LEE HIGHWAY FAIRFAX VA 220316050		9B. × 10/6	9B. DATED (SEE ITEM 11)						
CODE 072648579	FACILITY CODE		6/25/2019						
	11. THIS ITEM ONLY APPLIES T								
CHECK ONE A. THIS CHANGE ORDER IS ISSUED FORDER NO. IN ITEM 10A.	change an offer already submitted, since to the solicitation and this amenditired) DDIFICATION OF CONTRACTS/ORD PURSUANT TO: (Specify authority)	DERS. IT MO	may be made by letter or electronic communic	ation, provided pecified. SCRIBED IN IT HE CONTRAC	TEM 14.				
X C. THIS SUPPLEMENTAL AGREEMEN D. OTHER (Specify type of modification	FIS ENTERED INTO PURSUANT TO		or and						
E. IMPORTANT: Contractor 🗵 is not	is required to sign this document	t and return	copies to the issuin	n office					
14. DESCRIPTION OF AMENDMENT/MODIFICATION (DUNS Number: 072648579 TOCOR: DHSIEH Max Expire Datables of CHANGES: Reason for Modification: The the period of performance by Period Of Performance End Datables of CHANGES FOR LINE ITEM NUMBER End Date changed from 24-JUN Continued Except as provided herein, all terms and conditions of the 15A. NAME AND TITLE OF SIGNER (Type or print)	e: 06/24/2020 purpose of this ac 12 months. All other changed from 24- : 1	dministher con -JUN-20 or 10A, as her	crative modification winditions remain the same to 24-JUN-21	ll be to	fect.				
15B. CONTRACTOR/OFFEROR	15C. DATE SIGNED			LECTRONIC	16C. DATE SIGNED				
(Signature of person authorized to sign)		3.5	(Signature of Contracting Officer)	SIGNATURE	06/24/2020				

 CONTINUATION SHEET
 REFERENCE NO. OF DOCUMENT BEING CONTINUED
 PAGE
 OF

 68HERC19D0003/68HERC19F0199/P00001
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NAME OF OFFEROR OR CONTRACTOR

EM NO.	SUPPLIES/SERVICES	QUANTITY		UNIT PRICE	AMOUNT
(A)	(B)	(C)	(D)	(E)	(F)
	Payment:				
	RTP Finance Center				
	US Environmental Protection Agency				
	RTP-Finance Center (AA216-01)				
	109 TW Alexander Drive				
	www2.epa.gov/financial/contracts				
	Durham NC 27711				
	Period of Performance: 06/25/2019 to 06/24/2021				
		1			

AMENDMENT OF SOLICITATION/MODIFICA	ATION OF CONTRACT		1. CONTRACT ID CODE	PAGE	OF PAGES					
2. AMENDMENT/MODIFICATION NO.	3. EFFECTIVE DATE	4. REQ	UISITION/PURCHASE REQ. NO.	5. PROJEC	⊥ ΓNO. (If applicable)					
P00002 See Block 16C					, ,,					
S. ISSUED BY CODE CAD			7. ADMINISTERED BY (If other than Item 6) CODE CPOD							
CAD	0112		CPOD							
US Environmental Protection	Agency		US Environmental Protection Agency							
26 West Martin Luther King D			26 West Martin Luther King Drive							
Mail Code: W136	1110		l Code: NWD	DIIVC						
Cincinnati OH 45268-0001		RESERVED CONTROL	cinnati OH 45268							
8. NAME AND ADDRESS OF CONTRACTOR (No., street,	, county, State and ZIP Code)	(x) ^{9A.}	AMENDMENT OF SOLICITATION NO.							
ICF Incorporated, L.L.C.										
Attn: Robert Toth		9B.	9B. DATED (SEE ITEM 11)							
3300 LEE HIGHWAY										
AIRFAX VA 220316050		10/	MODIFICATION OF CONTRACT/ORDER N	10						
		X 68	A. MODIFICATION OF CONTRACT/ORDER N 3 HERC 1 9 D 0 0 0 3	10.						
		68	68HERC19F0199							
		10E	3. DATED (SEE ITEM 13)							
CODE 072648579	FACILITY CODE		6/25/2019							
	11. THIS ITEM ONLY APPLIES		,							
CHECK ONE A. THIS CHANGE ORDER IS ISSUED FORDER NO. IN ITEM 10A.	nce to the solicitation and this ameraired) ODIFICATION OF CONTRACTS/O PURSUANT TO: (Specify authority) CT/ORDER IS MODIFIED TO REFI	NOTION OF THE CHANGE LECT THE ADIES AUTHORITY	DDIFIES THE CONTRACT/ORDER NO. AS DESERTED FORTH IN ITEM 14 ARE MADE IN TMINISTRATIVE CHANGES (such as changes OF FAR 43.103(b).	SCRIBED IN I	TEM 14.					
D. OTHER (Specify type of modification	and authority)									
E. IMPORTANT: Contractor	is required to sign this docume	ent and return	copies to the issuin	g office.						
DUNS Number: 072648579 FOCOR: DHSIEH Max Expire Date Payment: RTP Finance Center US Environmental Protection RTP-Finance Center (AA216-01 109 TW Alexander Drive Www2.epa.gov/financial/contributham NC 27711 Period of Performance: 06/25 Except as provided herein, all terms and conditions of the 15A. NAME AND TITLE OF SIGNER (Type or print)	Agency) acts /2019 to 08/27/20	A or 10A, as he	retofore changed, remains unchanged and in t NAME AND TITLE OF CONTRACTING OFFI Liam M. Yates							
15B. CONTRACTOR/OFFEROR	15C. DATE SIGN		JNITED STATES OF AMERICA	LECTRONIC	16C. DATE SIGNED					
		1.8		SIGNATURE	10/21/2020					
(Signature of person authorized to sign)			(Signature of Contracting Officer)							